

ABSTRACT

The present invention is a method for constructing a geologic model of a subsurface reservoir which is a composite sedimentary body (30) composed of many 5 smaller fundamental sedimentary bodies (32). In one embodiment, the fundamental sedimentary bodies (32) within the composite body (30) are specified by the properties of the flow which built them, including the flow properties that existed at the local inlet (36) of each fundamental body (32). The statistical distribution of these local inlet properties is characterized throughout the composite sedimentary body (30) 10 using either outline forms of some of the fundamental sedimentary bodies (32) or a well penetration which samples the composite sedimentary body (30). The geologic model is constructed by placing an appropriate statistical distribution of the fundamental sedimentary bodies (32) into the outline form of the composite sedimentary body (30) so that the grain size distribution and/or other geologic 15 properties are specified at each point within the composite sedimentary body (30).